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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,391	12/19/2005	Pertti Huuhka	TUR-178	6520
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JAMES C. LYDON 100 DAINGERFIELD ROAD SUITE 100 ALEXANDRIA, VA 22314			EXAMINER TROUTMAN, MATTHEW D	
			ART UNIT 4112	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/561,391	<b>Applicant(s)</b> HUUHK, PERTTI	
	<b>Examiner</b> Matthew D. Troutman	<b>Art Unit</b> 4112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/19/2005</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Specification***

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 21, 25, 29 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 21, 25, 29, the phrase "advantageously" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 17, 20-25, 27- 31 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent # 5,062,488 – Lochmiller in view of US Patent # 4,984,638 - Coste.

Regarding claim 17, Lochmiller teaches:

A cultivation device intended for the cultivation of soil and pulled by a vehicle, the device comprising:

a frame (Fig. 6 – 16, 12, 14, 38, 44 24) with a drawbar (Fig. 6 – forward portion of 20 attached to 32, 30, 34 for attachment to be towed) attached to the frame, or which frame is intended to be coupled to a drawbar;

an attachment shaft (Fig. 6 – 50) for mouldboards, the shaft extending substantially in the direction of the longitudinal axis of the frame (Shaft 50 extends in the longitudinal axis of frame elements 38, 24, 44);

mouldboards (Fig. 6 – 54A-54F, 56A-56F);

wherein

a) there are two types of mouldboards (Fig. 6 – 54A-54F, 56A-56F); first mouldboards which during cultivation turn the soil to the right in relation to said driving direction (Col. 6 – line 43); and second mouldboards which during

cultivation turn the soil to the left in relation to said driving direction (Col. 6 – lines 45-46);

b) the mouldboards are fastened to the mouldboard attachment shaft so that the first mouldboards are substantially parallel in relation to each other, the second mouldboards are substantially parallel in relation to each other, and the first mouldboards are directed in a substantially different direction in relation to the second mouldboards (Fig. 7 – mouldboards are shown in two sets, the first being parallel in relation to each other and directed in a substantially different direction in relation to the second set of mouldboards, the second set of mouldboards being parallel in relation to each other); and

c) the mouldboard attachment shaft is arranged to be rotated around its longitudinal axis so that there are at least two attachment shaft positions to be used in the cultivation; a first position where the first mouldboards are arranged during cultivation to turn the soil to the right in relation to said driving direction; and a second position where the second mouldboards are arranged during cultivation to turn the soil to the left in relation to said driving direction (Col. 5 – lines 29-41).

Lochmiller lacks and a drawbar which is coupled or can be coupled substantially centrally to the frame so that the angle, between the longitudinal axis of the frame being substantially horizontal and transversal regarding the driving direction during cultivation and the drawbar being substantially in parallel with the driving direction, is arranged to be adjustable.

Coste teaches a drawbar (Fig. drawbar which is coupled centrally to the frame at pivoting point 7) which is coupled or can be coupled substantially centrally to the frame so that the angle, between the longitudinal axis of the frame being substantially horizontal and transversal (longitudinal axis of 8 is substantially horizontal and transversal to the driving direction) regarding the driving direction during cultivation and the drawbar being substantially in parallel with the driving direction, is arranged to be adjustable (the angle is adjustable by means of the hydraulic actuator 17 and pivot point 7).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Lochmiller to include a configuration between the drawbar and the frame in which the angle between the two would be adjustable. It is well known in the art, as taught by Coste, to connect the drawbar to the frame in such a manner that the angle between the two can be adjusted for creating plowing paths of varying widths of separation.

Regarding claim 20, Lochmiller lacks wherein the angle between the drawbar and the frame can be adjusted into at least two different positions, whereby in the first position the acute angle between the drawbar and the longitudinal axis of the frame is on the right side in relation to said driving direction, and in the second position the acute angle is on the left side in relation to said driving direction. Coste teaches a cultivation device wherein the angle between the drawbar and the frame can be adjusted into at least two different positions, whereby in the first

position the acute angle between the drawbar and the longitudinal axis of the frame is on the right side in relation to said driving direction, and in the second position the acute angle is on the left side in relation to said driving direction (Fig. 1 shows the first position with the acute angle on the right side of the drawbar. The frame of Coste can be pivoted at pivot point 7 by means of hydraulic actuator 17 to a second position in which the acute angle would be on the left side of the drawbar).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Lochmiller to include a frame that can be positioned angularly with respect to the drawbar. It is well known in the art, as taught by Coste, to attach the frame to the drawbar in a pivotal manner to allow for angular adjustment of the frame with respect to the drawbar for creating plowing paths of varying widths of separation.

Regarding claim 21, Lochmiller lacks wherein the angle between the drawbar and the longitudinal axis of the frame is adjustable, advantageously in a stepless manner, between about 0° and 180°, advantageously between about 10° and 160°.

Coste teaches a cultivation device wherein the angle between the drawbar and the longitudinal axis of the frame is adjustable, advantageously in a stepless manner, between about 0° and 180°, advantageously between about 0° and 160° (the hydraulic actuator 17 would adjust the angle of the frame with respect to the

drawbar in a stepless manner. Col. 4 – lines 46-53 disclose that the angular adjustment would take place over a range of 180°).

It would have been obvious to a person of ordinary skill in the art to modify Lochmiller to include wherein the angle between the drawbar and the longitudinal axis of the frame is adjustable in a stepless manner between about 0° and 180°. It is well known in the art, as taught by Coste, to adjust the frame with respect to the drawbar in a stepless manner between about 0° and 180° for creating plowing paths of varying widths of separation.

Regarding claim 22, Lochmiller teaches:

A cultivation device wherein the first mouldboards and the second mouldboards are mirror images of each other (Fig. 7 – upper and lower mouldboard are mirror images of each other).

Regarding claim 23, Lochmiller teaches:

A cultivation device wherein the mouldboard attachment shaft is fastened at least at its both ends to the frame of the cultivation device (Fig. 6 – Shaft 50 shown fastened on left end at 52C and on right end at 52A).

Regarding claim 24, Lochmiller teaches:

A cultivation device wherein the mouldboard attachment shaft is mounted in bearings at least at its both ends (Fig. 6 – bearings 52A and 52C).



Regarding claim 25, Lochmiller teaches:

A cultivation device wherein the mouldboard attachment shaft can be rotated about 180° around its longitudinal axis (Col. 5 – lines 35-37), advantageously about 90° or 60°.

Regarding claim 27, Lochmiller teaches:

A cultivation device wherein the cultivation device has a wheel or wheels (Fig. 6 – wheels 100A-100D), advantageously a wheel at both ends of the frame, which wheels support the cultivation device.

Regarding claim 28, Lochmiller teaches;

A cultivation device wherein the height of the wheel or wheels is arranged to be adjustable (Fig. 7 – height of wheels adjustable through means of 102, 104, 106, 108, 110), so that the cultivation depth of the cultivation device is adjusted by adjusting the height (when the height of wheels 100A-100D is adjusted the cultivation depth will also be adjusted).

Regarding claim 29, Lochmiller teaches wherein an adjustment or some adjustments of the cultivation device; advantageously the angle between the drawbar and the longitudinal axis of the frame and/or the rotation of the mouldboard attachment shaft around its longitudinal axis; is or are hydraulic (Fig.

11 – 82A, 82B are hydraulic actuators that are used for the rotation of the mouldboard attachment shaft around its longitudinal axis).

Regarding claim 30, Lochmiller teaches:

A cultivation device wherein the means, which rotate the mouldboard attachment shaft into the first and second positions, lock the attachment shaft into the first position when soil is cultivated with the first mouldboards (the rotating means assembly as disclosed by Lochmiller includes locking elements 58A, 58B, 60A, 60B, 64A, 64B).

Regarding claim 31, Lochmiller teaches:

A cultivation device wherein when the mouldboard attachment shaft is in its second position, which is used to cultivate the soil with the second mouldboards, the shaft can not be rotated further in that direction, into which the force acting on the mouldboards tends to rotate said attachment shaft during cultivation of the soil (when the attachment shaft is in its second position it is kept from rotating further by 62A, 62B, 64A, 64B, 60A, 60B).

7. Claim 26 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent # 5,062,488 – Lochmiller in view of US Patent # 4,984,638 - Coste as applied to claim 1 above, and further in view of US Patent # 3,985,187 - Callahan.

Regarding claim 26, Lochmiller in view of Coste lacks wherein each mouldboard is attached to the mouldboard attachment shaft with at least one shear pin.

Callahan teaches the use of shear pins when attaching the mouldboard assemblies of a cultivating device having separate mouldboards for right-handed and left-handed cultivation.

It would have been obvious to a person of ordinary skill in the art to modify Lochmiller in view of Coste to include shear pins in the connection assemblies of the mouldboards. It is well known in the art, as taught by Callahan, to use shear pins in the connection assemblies of mouldboards for protecting the mouldboards during operation that if an obstruction is encountered by the mouldboard the pin will shear allowing the mouldboard to pivot out of the way to avoid damage.

8. Claims 18, 19 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent # 5,062,488 – Lochmiller in view of US Patent # 4,984,638 - Coste as applied to claim 17 above, and further in view of ordinary skill in the art.

Regarding claims 18,19, the mouldboard assemblies of Lochmiller are considered to be a “light cultivation device” (applicant’s claim 18) or can also be defined as a “plough” (applicant’s claim 19). It would have been an obvious matter of design choice to modify the combination to include the cultivation depth range of 5 to 15cm (claim 18) or 10 to 25 cm (claim 19) since applicant has not disclosed that these ranges solve any particular problem or purpose and it

appears other similar ranges would work equally well. Furthermore, routine experimentation would lead one of ordinary skill in the art to these ranges.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art made of record but not relied upon is pertinent to applicant's attention while amending rejected claims due to the similar two-way cultivation devices disclosed or elements there of.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew D. Troutman whose telephone number is (571) 270-3654. The examiner can normally be reached on Monday through Friday 7:30am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David V. Bruce can be reached on (571) 272-2487. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 4112

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M.T./

mdt

/David V Bruce/  
Supervisory Patent Examiner, Art Unit 4112